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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,656

09/12/2005

Alessandra Bossi

P08538US00/MP

5185

881 7590 01/21/2009

STITES & HARBISON PLLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER

KWAK, DEAN P

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

01/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,656	Applicant(s) BOSSI ET AL.	
	Examiner Dean Kwak	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6 & 8-10 is/are rejected.
- 7) ☒ Claim(s) 3 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>02/01/2007</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: “microchannels (70)” on P12/L21 is unclear. Suggested correction is to replace (70) with (20). Appropriate correction is required.

Claim Objections

2. Claim 4 is objected to because of the following informalities: “**fusible is use**” recited in Claim 4 Line 2 is unclear. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4-6 & 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Manz et al. (*Trends in analytical chemistry*, vol. 10, no. 5, 1991).

Regarding Claim 1, Manz et al. disclose a method of producing a microfluidic device comprising:

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(a) providing a body comprising fusible material (e.g., silicon, P146/Micromachining/L3 & Fig. 3); and

(b) selectively applying energy so that a portion of the fusible material melts, thereby creating one or more microchannels in the body (see machining methods described, P146/Glossary).

Regarding Claims 2, 4 & 5, Manz et al. disclose all of the claim limitations as set forth above. In addition, Manz et al. disclose a microfluidic method comprising:

(i) producing a microfluidic device by the method of claim 1; and

(ii) passing an analyte material into a said microchannel (see carrier liquids and sample being injected, P147/Examples of structures & Fig. 5); wherein

- said body comprises a casing of material that is not fusible in use, and fusible material within said casing (see Fig. 3, silicon within thermal oxide deposition & photoresist deposition); wherein
- there are electrodes projecting into the body (e.g., platinum electrodes, P147/Examples of structures/L8).

Regarding limitations recited in Claim 6 which are directed to specific properties of energy being effected, it is noted that particles and/or voltage applied to an energy source would affect the energy source, and therefore, it will, inherently, display recited properties. See MPEP § 2112.

Regarding Claims 8-10, Manz et al. disclose all of the claim limitations as set forth above. In addition, Manz et al. disclose a method wherein:

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- the body contains one or more cavities (e.g., inlet and outlet holes, Fig. 6), optionally produced by said selective application of energy, communicating with one or more of said microchannels to function as reservoirs;
- the device is provided with one or more detection windows (e.g., optical windows, Fig. 6) and/or detection devices (e.g., detector cell, Fig. 6); and
- the device includes means for use in said selective application of energy (P146/Micromachining).

Allowable Subject Matter

5. Claims 3 & 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest a method in which energy is also selectively applied during step (ii) of Claim 2 to maintain and/or to alter the microchannel(s) of Claim 3 & the fusible material is ice, optionally containing a dissolved electrolyte of Claim 7.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean Kwak whose telephone number is 571-270-7072. The examiner can normally be reached on M-TH, 5:30 am - 4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

08Jan09

/D. K./
Examiner, Art Unit 1797

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797